JAGUAR SERVICE BULLETIN

Number I.1
Section Steering

Sheet 1 (of 1)
Date September, 1960

FITTING TOOL FOR STEERING BOX TOP COVER

An inexpensive special tool (Part number 8343) which facilitates fitting the top cover of steering units without damage to the oil seal is available from Jaguar Spares Division.

This tool takes the form of a tapered sleeve which when placed on the worm shaft whilst fitting the top cover avoids damage to the knife edge of the oil seal on the worm shaft serrations.

The use of this tool is particularly important on power-assisted steering units but can also be used on 2.4, 3.4 and 3.8 litre standard steering boxes.

Jaguar Cars Limited 2005

Number I.3.
Section Steering

Sheet 1 (of 1)
Date March, 1962

COMBINED IGNITION SWITCH AND STEERING LOCK

Models affected	Commencing Chassis Numbers L.H. Drive
3.4 litre Mark 2	177726
3.8 litre Mark 2	219370
"E" Type Open 2-seater	876665
"E" Type Fixed Head Coupe	885567

On all cars EXPORTED TO GERMANY with the above chassis numbers and onwards, a combined ignition switch and steering lock is introduced. The operation of this switch is as follows:-

1. Drive (Fahrt)

This is the normal driving position. The key cannot be withdrawn in this position and the ignition is "ON".

2. Garage (Garage)

This is the normal stop position. The key can be withdrawn leaving the car capable of being steered with the ignition "OFF".

3. Stop (Halt)

This is the locked stop position. The key can be removed leaving the steering locked with the ignition "OFF". (On certain models the key can only be removed after depressing the chromium plated bar situated on the right hand side of the keyhole).

To unlock the steering, insert the key in the lock and turn to Garage (Garage) or Drive (Fahrt) position.

Spares Bulletin numbers L.18 and L.19 refer.

Jaguar Cars Limited 2005

Number I.4.
Section Steering

Sheet 1 (of 1)
Date April, 1962

MODIFIED RACK AND PINION PRE-LOAD PLUNGER

Models affected	Commencing Chassis Numbers	
	R.H. Drive	L.H. Drive
"E" Type Open 2-seater	850404	876847
Fixed Head Coupe	860232	885736

On cars with the above chassis numbers and onwards, the belleville washers are replaced by a spring bearing on the rack pre-load plunger. The plunger, spring and retaining cap are interchangeable with the parts fitted to earlier cars provided all three parts are fitted. The method of adjustment is as shown in the "E" Type Service Manual, page I.7. except that retaining cap replaces the disc washer.

Spares Bulletin number L.21 refers.

CHECKING STEERING COUPLING SCREWS

(Mark 1, Mark 2 and Mark 1X models)

Although it is recommended in the 10,000 miles (16,000 km) service that all chassis and body nuts, screws and bolts are checked for tightness, it has come to our notice that this is not being carried out, particularly in the case of the steering coupling cap screws.

The importance of carrying out this service cannot be too highly stressed.

CORRECT ADJUSTMENT OF STEERING LOCK STOPS

(All Models)

The importance of maintaining the correct setting of the steering lock stops is brought to the notice of all distributors and dealers.

/Continued...

Jaguar Cars Limited 2005

Mal-adjustment of the stops giving increased lock may cause damage to the steering unit owing to undue loading of the internal parts.

Distributors and dealers are requested, therefore, to make a check on all cars coming in for service and ensure that the lock stops are correctly set.

Details of the lock stop setting procedure are given in the following publications.

Mark 1 2.4/3.4 litre Service Manual	-	page I.15.
Mark 2 2.4, 3.4 and 3.8 litre Service Manual	-	page I.20 for standard steering
	-	page I.33 for power-assisted steering
Mark 1X Handbook	-	page 52

Note: No lock stops are provided on cars with rack and pinion steering as the stops are incorporated in the steering unit.

Jaguar Cars Limited 2005

Number I.7.
Section Steering
Reissued
Sheet 1 (of 2)
Date November, 1962.

INTRODUCTION OF MODIFIED UPPER STEERING COLUMN.

Models affected.	Commencing Chassis Numbers.	
	R.H.Drive	L.H.Drive
2.4 litre Mark 2.	114063	126900
3.4 litre Mark 2.	161400	178733
3.8 litre Mark 2.	209382	221881
Mark 10.	301225	351545

Commencing at the above chassis numbers, a modified upper steering column is fitted to Mark 2 and Mark 10 Models. This enables the "Waso - Verkon" combined ignition switch and steering lock to be fitted as an optional extra.

General Description.

The combined ignition switch/steering lock replaces the normal ignition switch located in the instrument panel.

The switch/lock unit is mounted on an extension arm attached to the steering column below the steering wheel and the key has three operative positions - Drive (Fahrt), Garage (Garage) and Stop (Halt) as listed below; the fourth position "Start" not being used.

Operation of Switch.

(1) Drive (Fahrt).

This is the normal driving position. The key cannot be withdrawn in this position and the ignition is "ON".

/cont'd.....

Jaguar Cars Limited 2005

(2) Garage (Garage).

This is the normal stop position. The key can be withdrawn leaving the car capable of being steered with the ignition off.

(3) Stop (Halt).

This is the locked stop position. The key can be removed leaving the steering locked and the ignition "OFF". The key can only be removed after depressing the chromium plated bar situated on the right-hand side of the keyhole.

To unlock the steering, insert the key in the lock and turn to Garage (Garage) or Drive (Fahrt) position.

Fitting the steering column lock.

(1) Disconnect the battery.

(2)(a)(Automatic Transmission cars only). Remove the steering wheel and upper steering column as detailed in the Jaguar Service Manual, Mark 2 models - Section I "Steering" Page 19. Mark 10 models - Section I "Steering" Page I.18. Remove the control rod and mechanism to facilitate fitting of the lock.

(b)On standard and overdrive cars it is only necessary to lower the upper end of the column by removing the clamping bolt.

(3) Fit the lock to the steering column, but do not tighten the clamp bolts.

Check that the switch/lock assembly is correctly aligned in the lower cover cut-out. Insert the key and turn to the Stop (Halt) position. Remove the key and check that the lock bolt is entering the register holes in the outer and inner columns and the steering is locked.

Tighten the clamp bolts evenly until the heads shear off.

IMPORTANT.

IT IS IMPORTANT THAT THE CORRECT OPERATION OF THE LOCK IS ENSURED BEFORE THE CLAMP BOLTS ARE FULLY TIGHTENED.

AFTER THE HEADS OF THE BOLTS HAVE BEEN SHEARED OFF THE LOCK CANNOT BE REMOVED.

/cont'd.....

Jaguar Cars Limited 2005

(4) Refit the steering column as detailed on Page I.13. Mark 2 Service Manual, and Page I.23. Mark 10 Manual.

(5) Refit the steering wheel.

MODIFY THE IGNITION SWITCH WIRING AS FOLLOWS.

(1) Lower the instrument panel to the horizontal position after withdrawing the two retaining screws located in the top left and right hand corners.

(2) Disconnect the brown and white cable from the small terminal of the ammeter and tape back into the harness.

(3) Disconnect the brown and white cable from the ignition switch and tape back into the harness.

FIT THE STEERING LOCK CABLE CONNECTION AS FOLLOWS.

(1) Connect the long brown and white cable to the vacant small terminal on the ammeter.

Note: The lead is approximately 2' 6" (76.2 cm) long with P.V.C. sleeve. Tape into the harness until the point is reached where the main harness is taken through the bulkhead.

(2) (a) Pass the long white cable with P.V.C. sleeve through the bulkhead tape to the main harness up to the fuse box and connect to terminal A.3. (Mark 2 only).

(b) Connect single white cable with Black P.V.C. sleeve to vacant terminal on fuse 6 or 7 (Mark 10).

(3) Tape the steering lock connector to the harness on the steering column and connect to the lock switch as follows:

Connect the white cable to terminal No. 15.

Connect the brown and white cable to terminal No.30.

Remove the terminal from the switch cable ends and strip the cables $\frac{3}{8}$" (9.5 mm) before connecting to the switch.

/cont'd.....

Jaguar Cars Limited 2005

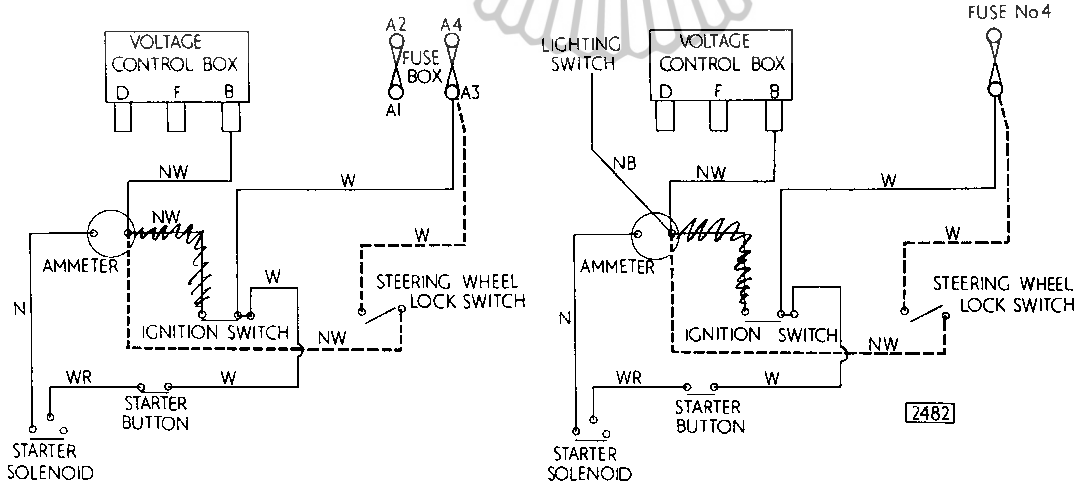
(4) Close the instrument panel and secure with the retaining screws.

Reconnect the battery and check the operation of the switch/lock.

Note: When the combined ignition switch/steering lock is fitted the normal ignition switch located in the instrument panel becomes inoperative.

Insert 3/16" (4.8 mm) diameter washers between the steering column and the side facia panel to a total thickness of 11/64" (4.36 mm) when refitting the tie bar. (Mark 2 only).

Spares Bulletin L.28 refers.



MK2 MODELS

MK IO MODEL

Jaguar Cars Limited 2005

INTRODUCTION OF MODIFIED UPPER STEERING COLUMN.

Models affected	Commencing Chassis Numbers.	
	R.H.Drive	L.H.Drive
2.4 litre Mark 2	114063	126900
3.4 litre Mark 2	161400	178733
3.8 litre Mark 2	209382	221881
Mark 10	301225	351545
'E' Type Open 2 seater	850588	878037
Fixed Head Coupe	860863	886754

Commencing at the above chassis numbers, a modified upper steering column is fitted to Mark 2, Mark 10 and 'E' Type cars. This enables the "Waso - Verkon" combined ignition switch and steering lock to be fitted as an optional extra.

General Description.

The combined ignition switch/steering lock replaces the normal ignition switch located in the instrument panel.

The switch/lock unit is mounted on an extension arm attached to the steering column below the steering wheel and the key has three operative positions - Drive (Fahrt), Garage (Garage) and Stop (Halt) as listed below; the fourth position "Start" not being used.

Operation of Switch.

(1) Drive (Fahrt).

This is the normal driving position. The key cannot be withdrawn in this position and the ignition is "ON".

/cont'd.....

Jaguar Cars Limited 2005

(2) Garage (Garage).

This is the normal stop position. The key can be withdrawn leaving the car capable of being steered with the ignition off.

(3) Stop (Halt).

This is the locked stop position. The key can be removed leaving the steering locked and the ignition "OFF". The key can only be removed after depressing the chromium plated bar situated on the right-hand side of the keyhole.

To unlock the steering, insert the key in the lock and turn to Garage (Garage) or Drive (Fahrt) position.

Fitting the steering column lock.

(1) Disconnect the battery.

(2)(a) (Automatic Transmission cars only). Remove the steering wheel and upper steering column as detailed in the Jaguar Service Manual, Mark 2 models - Section I "Steering" Page 19. Mark 10 models - Section I "Steering" Page I.18. 'E' Type cars - Section I "Steering" Page I.8. Remove the control rod and mechanism to facilitate fitting of the lock.

(b) On standard and overdrive cars it is only necessary to lower the upper end of the column by removing the clamping bolt.

(3) Fit the lock to the steering column, but do not tighten the clamp bolts.

Check that the switch/lock assembly is correctly aligned in the lower cover cut-out. Insert the key and turn to the Stop (Halt) position. Remove the key and check that the lock bolt is entering the register holes in the outer and inner columns and the steering is locked.

Tighten the clamp bolts evenly until the heads shear off.

IMPORTANT

IT IS IMPORTANT THAT THE CORRECT OPERATION OF THE LOCK IS ENSURED BEFORE THE CLAMP BOLTS ARE FULLY TIGHTENED.

AFTER THE HEADS OF THE BOLTS HAVE BEEN SHEARED OFF THE LOCK CANNOT BE REMOVED.

/cont'd.....

Jaguar Cars Limited 2005

(4) Refit the steering column as detailed on Page I.13. Mark 2 Service Manual, Page I.23. Mark 10 Manual, and Page I.10 'E' Type Manual.

(5) Refit the steering wheel.

(MARK 2 AND MARK 10 CARS) MODIFY THE IGNITION SWITCH WIRING AS FOLLOWS.

(1) Lower the instrument panel to the horizontal position after withdrawing the two retaining screws located in the top left and right hand corners.

(2) Disconnect the brown and white cable from the small terminal of the ammeter and tape back into the harness.

(3) Disconnect the brown and white cable from the ignition switch and tape back into the harness.

(MARK 2 AND MARK 10 CARS)FIT THE STEERING LOCK CABLE CONNECTION AS FOLLOWS

(1) Connect the long brown and white cable to the vacant small terminal on the ammeter.

Note: The lead is approximately 2' 6" (76.2 cm) long with P.V.C. sleeve. Tape into the harness until the point is reached where the main harness is taken through the bulkhead.

(2)(a) Pass the long white cable with P.V.C. sleeve through the bulkhead tape to the main harness up to the fuse box and connect to terminal A.3. (Mark 2 only).

(b) Connect single white cable with Black P.V.C. sleeve to vacant terminal on fuse 6 or 7 (Mark 10).

(3) Tape the steering lock connector to the harness on the steering column and connect to the lock switch as follows:

Connect the white cable to terminal No.15.

Connect the brown and white cable to terminal No.30.

Remove the terminal from the switch cable ends and strip the cables $\frac{3}{8}$" (9.5 mm) before connecting to the switch.

/cont'd.

Jaguar Cars Limited 2005

(4) Close the instrument panel and secure with the retaining screws.

Reconnect the battery and check the operation of the switch/lock.

('E' TYPE ONLY) MODIFY THE IGNITION SWITCH WIRING AS FOLLOWS:

(1) Lower the instrument panel to the horizontal position after withdrawing the two retaining screws located in the top right-hand and left-hand corners.

(2) Disconnect the white cable from the starter switch and tape back into the harness.

(3) Disconnect the white cable from the ignition switch and tape back into the harness.

(4) Transfer the brown and white cables on the ignition switch from the existing single terminal to the vacant double terminal.

(5) Disconnect the feed cable - colour white with a green ident from fuse 6 or 7, refer to the fuse chart attached to the instrument panel, and tape back into the harness.

Note: On early models, the green ident is omitted and the correct cable must be ascertained by test.

('E' TYPE ONLY) FIT THE STEERING LOCK CABLE CONNECTOR AS FOLLOWS:

(1) Connect the single white cable - paired with brown and white cable - to the vacant terminal on the starter switch.

(2) Connect the adjacent brown and white cable to the vacant blade of double terminal on existing ignition switch and tape the connector harness to the main harness on the instrument panel.

(3) Connect the single white cable, with black P.V.C. sleeve, to the vacant terminal on fuse 6 or 7.

(4) Tape the steering lock connector harness to the harness on the steering column and connect the double white cable to the terminal 15, and adjacent brown and white cable to terminal 30 of steering column lock.

/cont'd.....

Jaguar Cars Limited 2005

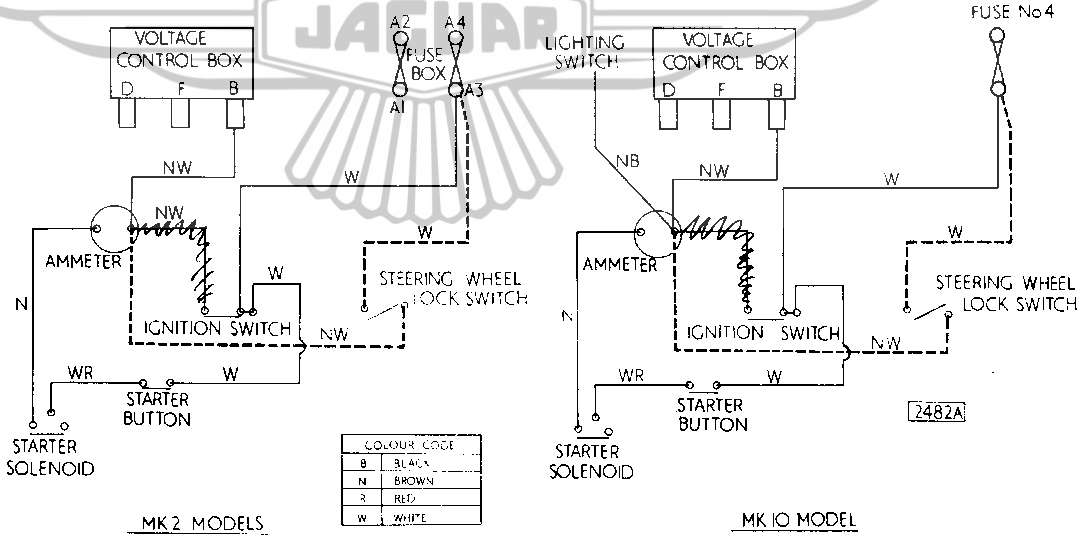
(5) Close the instrument panel and secure with the retaining screws.

Re-connect the battery and check the operation of the switch/lock.

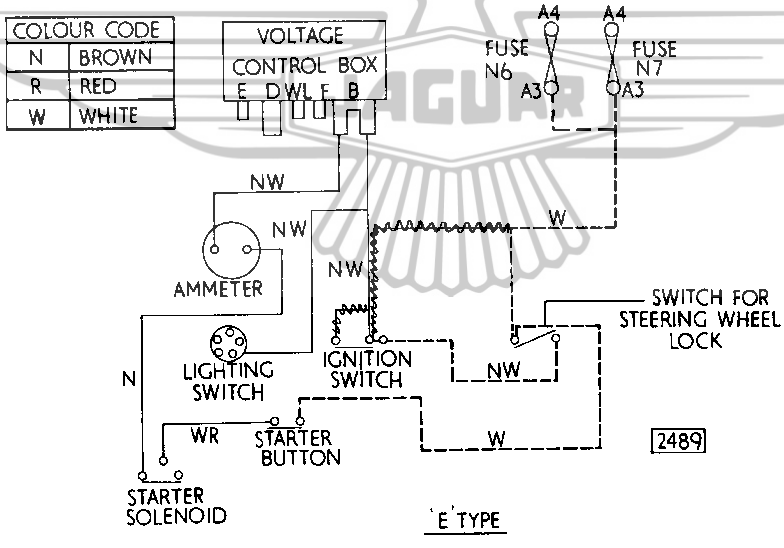
Note: When the combined ignition switch/steering lock is fitted the normal ignition switch located in the instrument panel becomes inoperative.

Insert 3/16" (4.8 mm) diameter washers between the steering column and the side facia panel to a total thickness of 11/64" (4.36 mm) when refitting the tie bar. (Mark 2 only).

Spares Bulletin L.28 refers.



Jaguar Cars Limited 2005



Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.10.
Section Steering

Sheet 1 (of 1)
Date March, 1963.

MODIFIED UPPER AND LOWER STEERING COLUMNS.

Models affected	Commencing Chassis Numbers.	
	R.H.Drive.	L.H.Drive.
2.4 litre Mark 2.	114849	127055
3.4 litre Mark 2.	162488	178974
3.8 litre Mark 2.	230140	222241

Commencing at the above chassis numbers cars are fitted with upper and lower steering columns similar to the type used on the Mark 10 Model.

The upper column now has a thrust bearing arrangement similar to that illustrated in Fig.17. on page I.20 of the Mark 10 Service Manual.

The lower column has a top universal joint of the "pot" type similar to that illustrated in Plate 46 of the Mark 10 Spares Catalogue.

When connecting the lower column to upper column, the upper half of the pot joint should be depressed to the limit of its travel and then raised ⅛" (3 mm). The pinch bolt should then be fully tightened.

Spares Bulletin No. L.30 refers.

Jaguar Cars Limited 2005

NOTE: When ordering parts please take into account that only ⅓ to ½ of the total number of cars require the Socket 9980 and Clip 9617.

Fitting Instructions:-

1. Remove the bolt, nut and spacing washer (C.22283) (if fitted) securing the lower column top joint to the upper steering column.

2. Turn the road wheels to the straight ahead position and note the position of the slot in the lower column top joint.

NOTE: It is important that the road wheels are not turned from this position until the steering columns are re-aligned. Any deviation will upset the centralisation of the flasher cancelling switch and the positioning of the steering wheel spokes.

3. Measure the distance from the top machined face to the bottom machined face of the top joint socket on the lower steering column (See Fig.1). If it is less than 2.29/32" (7.38 cm) long a new socket (9980) should be fitted. (The socket to be replaced measures 2.21/32" (6.75 cm).

NOTE: In the case of parts replaced in the United Kingdom, the displaced material must be returned to the factory with the guarantee claim. Overseas Distributors and Dealers must DESTROY the displaced material and provide a certificate on the guarantee claim to this effect.

4. Press the top joint socket down until it bottoms and then raise towards the upper column until a minimum of 3/16" (4.76 mm) or a maximum of 5/16" (7.93 mm) movement is achieved. This movement will be controlled by the position of the upper steering outer column which can, if necessary be moved forward to meet the lower steering column by adjustment at the fixing bracket to the dash and loosening the securing clip (C.2905/4) on the scuttle.

Having achieved the condition described in the previous paragraph now measure the distance between the top machined face of the top joint socket and the bottom of the chamfer on the inner column ("A" Fig.2) to ascertain if the spacing collar (C.22698) which is 1.3/32" (2.78 cm) long can be fitted. If necessary the spacing collar can be reduced in length by cutting at the unchamfered end.

/cont'd.....

Jaguar Cars Limited 2005

JAGUAR

SERVICE BULLETIN

Number I.12.
Section Steering

Sheet 1 (of 1)
Date March, 1964.

IMPROVED TIE ROD BALL JOINT GREASE SEALS.

Models affected.	Commencing chassis numbers.	
	R.H.Drive.	L.H.Drive.
2.4 litre Mark 2	117370	127486
3.4 litre Mark 2	166075	179733
3.8 litre Mark 2	232331	223447
	plus certain individual cars prior to these numbers.	

On cars with the above chassis numbers and onwards improved grease seals are fitted to the tie rod ball joints. In conjunction with the fitting of this type of seal a bleed hole is incorporated in the ball joint. The bleed hole is covered by a circular nylon washer which lifts under pressure and allows grease to escape and indicates when sufficient lubricant has been applied (see illustration on page 2 of service bulletin J.16). This obviates the tendency for grease to escape past the seals when too much pressure is applied.

Spares Bulletin No. J.36 refers.

UPPER STEERING COLUMN THRUST BEARING.

Models affected.

Mark 10
2.4 litre Mark 2
3.4 litre Mark 2
3.8 litre Mark 2

If complaints are received of excessive end float in the upper steering column or of a knock being transmitted up the column, a Grade 'B' thrust bearing (Part number C.19559/5) should be fitted. This bearing is .002" to .004" (.05 to .10 mm) thicker than the previous bronze type and has the letter 'B' etched on the end face. When refitting, smear the bearing with colloidal graphite, fit a new spring clip (Part numberC20127) to the retaining ring and secure by tightly pinching the raised portion of the clip with a pair of pincers.

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.13.
Section Steering.

Sheet 1 (of 1)
Date May, 1964.

UPPER STEERING COLUMN BEARINGS - IMPROVED TYPE.

Models affected.	Commencing chassis numbers.	
	R.H.Drive.	L.H.Drive.
2.4 litre Mark 2	117200	127455
3.4 litre Mark 2	165802	179679
3.8 litre Mark 2	232179	223408
Mark 10 Automatic Transmission	308006	353483
Mark 10 Overdrive	308012	353482
'E' Type Open 2 seater	850819	880983
'E' Type Fixed head coupe	861481	889967
3.4 'S'	1B1002	1B25004
3.8 'S'	1B50246	1B75048

On cars with the above chassis numbers and onwards "Elastollan" upper steering column bearings (Part number C.23592 lower and C.23593 upper) are fitted. These are interchangeable with the previous type fitted.

Spares Bulletin No. L.46 Refers.

INTRODUCTION OF STEERING IDLER ASSEMBLY WITH TAPER ROLLER BEARINGS.

(Standard steering cars)

Models affected.	Commencing chassis numbers.	
	R.H.Drive.	L.H.Drive.
2.4 litre Mark 2	117585	127544
3.4 litre Mark 2	166588	179841
3.8 litre Mark 2	232641	223644
	plus certain individual cars prior to these numbers.	

On cars with the above chassis numbers and onwards standard steering models are fitted with a steering idler assembly having taper roller bearings. This assembly is similar to that fitted to power-assisted steering cars but is not the same unit.

The new assembly can be fitted in place of the previous plain bush type of idler when replacement becomes necessary.

Spares Bulletin No. J.40 Refers.

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.14.
Section Steering.

Sheet 1 (of 1)
Date May, 1964.

EXAMINATION OF STEERING UNITS IF CAR HAS BEEN INVOLVED IN FRONTAL ACCIDENT.

If a car has sustained accidental damage at the front end, the steering unit should be examined for signs of twisting at the rocker shaft/droparm serrations and any other signs of damage. Furthermore if a steering unit is removed from a car that has sustained accident damage and returned to the factory this fact should be noted in any correspondence, advice notes, etc. As a further indication a white cross should be painted on the actual steering unit.

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.16.
Section Steering.

Sheet 1 (of 1)
Date October, 1964.

MODIFIED LOWER STEERING COLUMN UPPER UNIVERSAL JOINT.

Models affected.	Commencing chassis numbers.	
	R.H.Drive.	L.H.Drive.
2.4 litre Mark 2	118074	127644
3.4 litre Mark 2	167662	180004
3.8 litre Mark 2	233279	223982
3.4 'S' Type	1B1893	1B25233
3.8 'S' Type	1B51689	1B76037

On cars with the above chassis numbers and onwards a modified type of upper universal joint (pot joint) is fitted to the lower steering column. The pot joint is now in two halves and if it is necessary to gain access to the nylon rollers the four screws will have to be removed.

Jaguar Cars Limited 2005

JAGUAR

SERVICE BULLETIN

Number I.18.
Section Steering.

Sheet 1 (of 1)
Date April, 1965.

UPPER STEERING COLUMN THRUST BEARING.

Models affected.	Commencing chassis numbers.	
	R.H. Drive.	L.H. Drive.
2.4 litre Mark 2	118577	127712
3.4 litre Mark 2	168499	180086
3.8 litre Mark 2	233753	224067
3.4 'S' Model	1B.2769	1B.25382
3.8 'S' Model	1B.52990	1B.76922

On cars with the above chassis numbers and onwards a new type of Nylon thrust bearing is fitted replacing the aluminium bronze type used previously.

The thrust bearing is available in two grades of thickness

Part number.	Thickness.
C.23762/1	.312 to .314" (7,9 to 7,95 mm)
C.23762/2	.314 to .316" (7,95 to 8,0 mm).

Spares Bulletin No. L.52 refers.

C. 20127 2/9 (1)

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.23.
Section Steering.

Sheet 1 (of 1)
Date September, 1965.

UPPER STEERING COLUMN TOP BEARING.

Models affected	Commencing chassis numbers	
	R.H.Drive	L.H.Drive.
4.2 Mark 10	1D.51137 plus 1D.51052 to 1D.51103	1D.75679 plus 1D.75628 to 1D.75671
3.4 'S' Type	1B.4534	1B.25606
3.8 'S' Type	1B.54955	1B.78127

Cars with the above chassis numbers and onwards are fitted with an adjustable upper steering column top bearing.

If the column has been dismantled or the flashing indicator switch has been removed the bearing should be adjusted as follows:-

The bearing can be adjusted with the column in situ if the inner column is disconnected at the universal (pot) joint as detailed in the Service Manual - Section I Steering.

Pass the two fixing screws through the switch clamp and attach the spring washer and locknut to the upper screw and the distance piece and washer to the bottom screw.

Feed the screws through the column brackets and attach the indicator switch.

Tighten the bottom screw fully.

Fit the inner column and temporarily attach the steering wheel (if removed).

Attach a spring balance to the steering wheel rim.

Tighten the top screw until the wheel will just turn with a pull of 5ozs (141.7 grammes) registered on the balance (see illustration).

Turn the locknut towards the clamp plate and lock the screw.

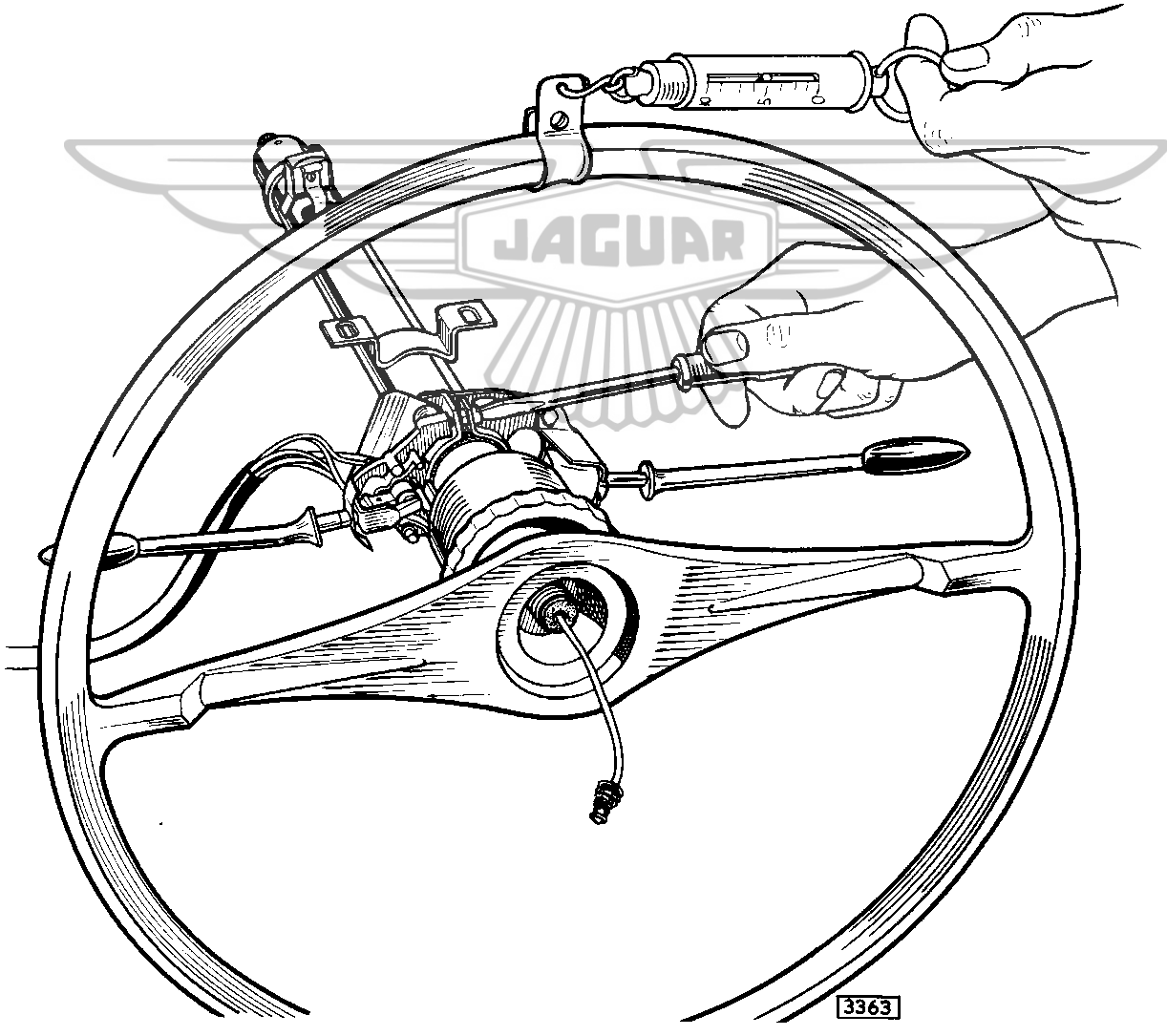
/cont'd.....

Jaguar Cars Limited 2005

Two thicknesses of distance piece are available to compensate for any variations in the bore of the column.

Grade 'A'	.188" (4.7 mm)	(Part number C.26023/1)
Grade 'B'	.106" (4.06 mm)	(Part number C.26023/2)

Spares Bulletin No. L.54 refers.



Jaguar Cars Limited 2005

JAGUAR

SERVICE BULLETIN

Number I.23 (2nd issue)
Section Steering

Sheet 1 (of 1)
Date November, 1965

This Service Bulletin supersedes the original issue of Bulletin I.23, September, 1965, which should be destroyed.

UPPER STEERING COLUMN TOP BEARING

Models affected	Commencing chassis numbers	
	R.H. Drive	L.H. Drive
4.2 Mark 10	ID.51137 plus ID.51052 to ID.51103	ID.75679 plus ID.75628 to ID.75671
3.4 'S' Type	IB.4534	IB.25606
3.8 'S' Type	IB.54955	IB.78127
2.4 litre Mark 2	119277	127839
3.4 litre Mark 2	169516	180230
3.8 litre Mark 2	234287	224182

Cars with the above chassis numbers and onwards are fitted with an adjustable upper steering column top bearing.

If the column has been dismantled or the flashing indicator switch has been removed the bearing should be adjusted as follows:-

The bearing can be adjusted with the column in situ if the inner column is disconnected at the universal (pot) joint as detailed in the Service Manual - Section I Steering.

Pass the two fixing screws through the switch clamp and attach the spring washer and locknut to the upper screw and the distance piece and washer to the bottom screw.

Feed the screws through the column brackets and attach the indicator switch.

Tighten the bottom screw fully.

Fit the inner column and temporarily attach the steering wheel (if removed).

Attach a spring balance to the steering wheel rim.

/Cont'd.

Jaguar Cars Limited 2005

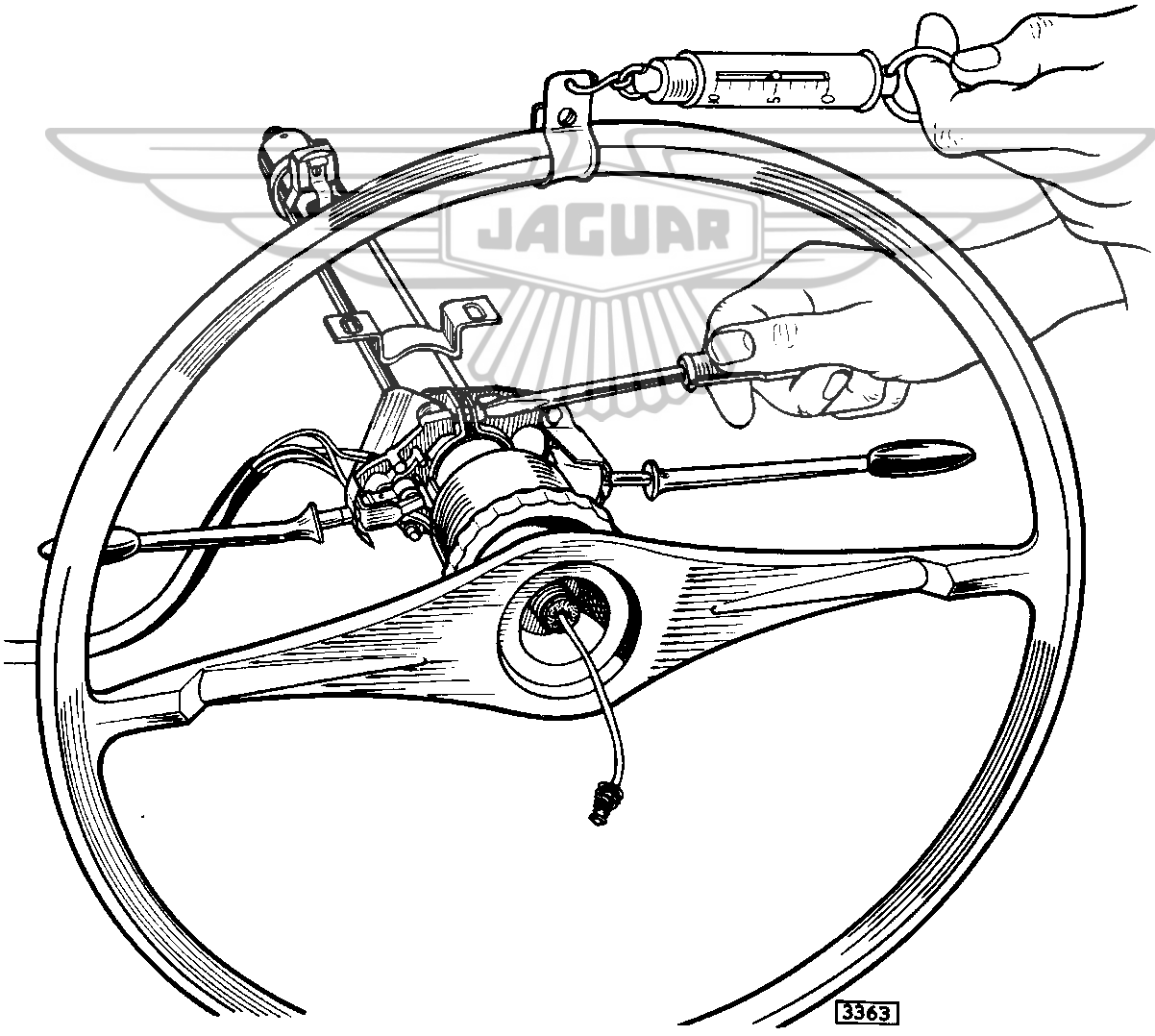
Tighten the top screw until the wheel will just turn with a pull of 5 ozs (141.7 grammes) registered on the balance (see illustration).

Turn the locknut towards the clamp plate and lock the screw.

Two thicknesses of distance piece are available to compensate for any variations on the bore of the column.

Grade 'A'	.188" (4.7 mm)	(Part Number C.26023/1)
Grade 'B'	.160" (4.06 mm)	(Part Number C.26023/2)

Spares Bulletin No. L.54 refers.



Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.24
Section Steering

Sheet 1 (of 1)
Date April, 1966

UPPER STEERING COLUMN TOP BEARING
(See also Service Bulletin P.45)

Models affected	Commencing chassis numbers	
	R.H. Drive	L.H. Drive
4.2 Mark 10	1D.51955	1D.76088
3.4 'S' type	1B.56872	1B.78909
3.8 'S' type	1B.6092	1B.25788
2.4 litre Mark 2	119581	127912
3.4 litre Mark 2	170091	180310
3.8 litre Mark 2	234715	224271

Cars with the above chassis numbers and onwards are fitted with an improved type direction indicator switch.

The method of procedure for adjusting the upper steering column top bearing differs from that stated on Bulletin I.23 as follows:

The locknut is now fitted to the bottom switch clamp screw and the distance piece to the upper screw.

To adjust the bearing, tighten the upper screw fully and attach the spring balance to the steering wheel rim.

Tighten the bottom screw until the wheel will just turn with a pull of 5 ozs. (141.7 grammes) registered on the balance.

Turn the locknut towards the switch carrier bracket and lock the screw.

Re-connect the universal (pot) joint as stated in the appropriate Service Manual - Section I - Steering.

Refit steering wheel and nacelle covers.

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.26
Section Steering

Date September, 1966

STEERING COLUMN JOINTS - (RUBBER)

It is now recommended that on all cars fitted with rubber couplings (not "pot" joints) between the upper and lower steering columns the condition of the joint should be checked at approximately 10,000 miles (16,000 km.) intervals for (a) possible contamination with petrol, oil or brake fluid which could cause deterioration of the rubber and for (b) the bonding.

Joints which show signs of deterioration must be replaced.

Details for dismantling and re-assembling are given in the appropriate Service Manual.

Jaguar Cars Limited 2005

Number II.1
Section Power-assisted Steering
Sheet 1 (of 1)
Date March, 1960

POWER ASSISTED STEERING - PRELIMINARY INFORMATION

(3.4/3.8 litre Mark 2 Models)

Checking the Reservoir Oil Level (Every 1,250 miles - 2,000 km)

The oil reservoir is attached to the left-hand wing valance. It is important that absolute cleanliness is observed when replenishing with oil as any foreign matter that enters may affect the hydraulic system. Clean the area around the filler cap and then remove the cap by turning anti-clockwise.

Check the level of oil and top up if necessary with the recommended grade. The level of oil must be just above the filter element located in the reservoir.

IMPORTANT If the oil level is allowed to fall appreciably, the power assistance to the steering will be affected.

Changing the Oil Reservoir Filter (Every 20,000 miles - 32,000 km)

At the recommended intervals, renew the paper filter element in the oil reservoir.

Unscrew the bolt securing the oil reservoir top cover. Lift off the top cover and collect the spring and retainer plate. The filter element can now be lifted out from the reservoir.

When fitting the new element (Part No. 7752) ensure that it is located in the support plate at the bottom of the reservoir. Refit the retainer plate, spring and top cover. Tighten the central bolt.

Steering Idler Assembly

On cars fitted with power assisted steering, taper roller bearings are incorporated in the idler assembly and no grease nipple is fitted. The housing is pre-packed with grease which only requires replenishing if the idler assembly is dismantled for overhaul.

/Cont'd...

Jaguar Cars Limited 2005

Operating Pressure

The maximum oil pressure is 800 to 850 lbs per sq. in. (55.2 to 58.65 kg/cm^2) with the engine running at 1,000 r.p.m. and the road wheels against the stops.

To check the pressure, insert a pressure gauge in the discharge line as close to the pump as possible.

If the oil pressure is low it may be due to one of the following causes:-

(1) Low oil level. Add oil as necessary.

(2) Fan belt slippage. Adjust tension.

(3) Stuck valves, dirt wedged in valves. Remove valves from pump and check for free operation.

(4) Valving surfaces scored by abrasive matter. Replace all scored or worn parts. Clearance of relief valve to bore should not exceed .0015" (.04 mm).
Clearance of flow control valve to bore should not exceed .0015" (.04 mm).

Recommended Lubricants

Mobil	Wakefield	Shell	Esso	B.P.	Duckham
Mobil Fluid 200	Castrol T.Q. Automatic Transmission Fluid Grade 'A'	Shell Donax T6	Esso Automatic Transmission Fluid 55	Energol Automatic Transmission Fluid Type 'A' or Type 'A' Suffix 'A'	Nolmatic

S.A.E. Automatic Transmission Fluid, Type 'A' or Type 'A' Suffix 'A'

Use only one of the above recommended lubricants. Do NOT use gear oil as recommended for the steering unit without power assistance.

Jaguar Cars Limited 2005

POWER ASSISTED STEERING CONVERSION

(3.4 and 3.8 litre Mark 2 Models)

Conversion kits can now be obtained from the Jaguar Spares Division to enable 3.4 and 3.8 litre Mark 2 models to be converted to power-assisted steering at customers requests.

The following are the details and prices of the kits that may be required; in some cases it may be necessary to change the exhaust manifolds and on some right-hand drive cars to replace the oil filter with a downward pointing type.

	Right-hand Drive		Left-hand Drive	
	Part No.	Price	Part No.	Price
Kit A	8443	£90. 0. 0.	8444	£90. 0. 0.
Kit B (Oil Filter)	8443/1	£5. 15. 0.	-	-
Kit C (Exhaust Manifolds)	8443/2	£10. 10.0.	8443/2	£10. 10.0.

Note: Kit B only required for engines numbered

KG.1001 to KG.4674 - 3.4 litre LA.1001 to LA.7449 - 3.8 litre

Kit C only required for cars having chassis numbers

150001 to 150700 - 3.4 litre 200001 to 200404 - 3.8 litre

The fitting time should be approximately 25 hours. No allowance can be made by us for displaced material.

Fitting Instructions

The following parts or assemblies must first be removed from the car:

Exhaust manifolds
Downpipe assemblies
Dynamo
Steering box assembly

Jaguar Cars Limited 2005

/Continued...

Steering idler assembly
Centre tie-rod assembly
Lower steering column assembly

From the parts supplied replace all the above paying attention to the following points:

1. To replace the steering box, the steering column must be moved back about one inch after removing the pinch bolt from the lower column. Before re-connecting the column, ensure that the road wheels are in a "straight-ahead" position and that the trafficator switch cancels evenly on each side of the straight ahead position.

2. When re-setting the lock-stops on the idler and drop arm first screw in lock-stop bolts fully and turn the wheels up to the full travel in the steering box. Screw the lock-stop bolt up against idler or drop arm and then rotate it anti-clockwise a further four turns. Repeat for opposite lock.

3. Check steering geometry.

Before fitting the reservoir on left-hand drive cars, fit the heat shield to the brackets mounted on the exhaust manifolds.

Fit the fluid reservoir to the left-hand wing valance where there are three holes already drilled to take it. The mounting plates are positioned one either side of the valance.

By means of the banjo bolts and clips provided fit the hoses as follows:

1. From reservoir to top of pump (comprises one long hose from reservoir, one elbow pipe and one short hose to pump).

2. Pump to front end of steering box.

3. Steering box return to reservoir.

When fitting the hoses to the reservoir note that the feed to the pump is the rearmost on the reservoir.

Fill the reservoir with automatic transmission fluid until the top of the filter is covered.

Start the engine and allow to idle. Whilst the engine is idling pour more oil into the reservoir until the level just covers the filter.

Check the hose connections for leaks.

Increase the engine speed to 1,000 r.p.m. and turn the wheels in each direction five or six times.

Re-check for leaks and oil level in reservoir after road test.

Spares Bulletin No. L.13 refers

Jaguar Cars Limited 2005

Number II.3
Section Power-assisted Steering
Sheet 1 (of 1)
Date June, 1961

INTRODUCTION OF ROLLER TYPE PUMP ON POWER-ASSISTED STEERING CARS

Models affected	Commencing Engine Numbers
3.4 litre Mark 2	KG.7700
3.8 litre Mark 2	LB.2634

On cars with the above engine numbers and onwards a roller type pump (Part number C.16190) replaces the existing type of eccentric rotor type. To suit this modification modified hoses from the reservoir to pump (Part number C.16101) and from the pump to steering unit (Part number 18415 R.H. and C.16187 L.H. Drive) are fitted.

Spares Bulletin number L.14 refers.

Jaguar Cars Limited 2005

JAGUAR **SERVICE BULLETIN**

Number II.4.
Section Power Assisted Steering
Sheet 1 (of 1)
Date January, 1962

DUST SEAL ON STEERING BOX

Models affected	Commencing Chassis Numbers	
	R.H. Drive	L.H. Drive
3.4 litre Mark 2	158038	177654
3.8 litre Mark 2	206927	219030

On cars with the above chassis numbers and onwards, a dust seal is introduced on the power assisted steering unit. The seal which is of Neoprene material is fitted over the inner column and steering box end plate and may be fitted to previous steering boxes if desired.

Spares Bulletin Number L.15 refers.

Jaguar Cars Limited 2005

Number II.5.
Section Power-Assisted Steering
Sheet 1 (of 1)
Date May, 1962

POWER-ASSISTED STEERING OPERATING PRESSURES

On cars fitted with power-assisted steering, the operating pressures are as follows:-

Model	Operating Pressure
Mark V111	600 - 650 lbs/sq. in (42.18 - 45.70 kg/cm^2)
Mark 1X	600 - 650 lbs/sq. in (42.18 - 45.70 kg/cm^2)
3.4 litre Mark 2	800 - 850 lbs/sq. in (56.24 - 59.76 kg/cm^2)
3.8 litre Mark 2	800 - 850 lbs/sq. in (56.24 - 59.76 kg/cm^2)
Mark 10	1,000 lbs/sq. in (70.3 kg/cm^2)

To check the pressure, the steering should be held on full lock against the stops with the engine running at a steady 1,000 r.p.m.

For Mark V111 and 1X models, the pressure gauge adaptor (Tool No. J.10.) should be inserted at the union on top of the steering box rocker shaft cover.

For Mark 2 and Mark 10 models, the adaptor should be inserted between the end of the flexible hose from the pump and the base of the steering box.

Jaguar Cars Limited 2005

Number II.6.
Section Power-Assisted Steering
Sheet 1 (of 1)
Date July, 1962

PREVENTING DAMAGE TO THE TRANSFER TUBE

(Mark 2 and Mark 10 Power-Assisted Steering Models)

When dismantling the power-assisted steering unit the following procedure must be adopted to avoid causing damage to the main nut transfer tube.

Before removing the rocker shaft cover or disengaging the rocker shaft from the nut, turn the splined input shaft as far as possible ANTI-CLOCKWISE for right-hand drive cars and CLOCKWISE for left-hand drive cars.

The rocker shaft can now be tapped upwards out of engagement with the socket on the nut. Remove the worm and nut in the normal way.

Failure to carry out the above procedure will result in the lower portion of the rocker shaft fouling the transfer tube.

Jaguar Cars Limited 2005

JAGUAR

SERVICE BULLETIN

Number II.7.
Section Power-assisted steering.

Sheet 1 (of 1)
Date March, 1963.

FITTING TOOL FOR STEERING BOX TOP COVER.

An inexpensive special tool (Part number 8343) which facilitates fitting the top cover of power steering units without damage to the oil seal is available from Jaguar Spares Division.

This tool takes the form of a tapered sleeve which when placed on the worm shaft whilst fitting the top cover avoids damage to the knife edge of the oil seal on the worm shaft serrations.

This tool is not suitable for standard steering boxes and therefore Service Bulletin I.1. should be cancelled.

Jaguar Cars Limited 2005

Number II.8.
Section Power-assisted Steering.

Sheet 1 (of 1)
Date April, 1963.

INTRODUCTION OF POWER - ASSISTED STEERING PUMP WITH FALLING FLOW CONTROL.

Model affected.	Commencing Engine Number.
Mark 10	ZA. 6530

Commencing at the above engine number, a modified Hobourn Eaton power steering pump with Falling Flow Control is fitted to Mark 10 cars.

The "falling flow control" is incorporated to alleviate high temperature conditions associated with high speed driving and becomes effective above 5,000 r.p.m. Later cars fitted with this pump can be identified by the suffix F stamped on the pump (Part No. C.19657/1).

The pump is interchangeable only as a complete unit with the earlier type.

Spares Bulletin No. L.34 refers.

INTRODUCTION OF BLEED POINT ON POWER-ASSISTED STEERING UNIT.

Model affected.	Commencing Chassis Numbers.	
	R.H.Drive.	L.H.Drive.
Mark 10	303738	352573
3.4 litre Mark 2	162967	179130
3.8 litre Mark 2	230493	222519

Commencing at the above chassis numbers, a bleed point is fitted in the top cover of the power steering box.

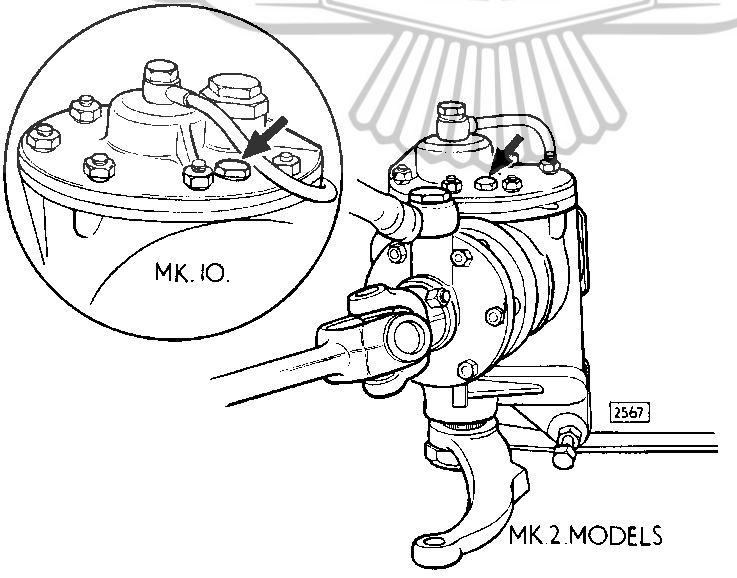
/cont'd.....

Jaguar Cars Limited 2005

If a lumpy feeling on one particular lock is experienced, it will be necessary to slacken the plug half a turn or so to release air from the unit while the engine is running. Always tighten the plug securely after bleeding the unit.

This procedure for "bleeding" should be carried out every time the power steering hydraulic system has been disconnected and should be used as standard procedure in place of the instructions given in the relevant Service Manual.

Spares Bulletin No. L.34 refers.



Jaguar Cars Limited 2005

Number II.10
Section Power-Assisted Steering.

Sheet 1 (of 1)
Date September, 1963.

INTRODUCTION OF POWER-ASSISTED STEERING PUMP WITH FALLING FLOW CONTROL.

Models affected	Commencing Engine Numbers.
3.4 litre Mark 2	KJ. 1497
3.8 litre Mark 2	LC. 7303

Commencing at the above engine numbers, a modified Hobourn Eaton power steering pump (Part Number C.19803/1) with falling flow control is fitted to 3.4/3.8 litre Mark 2 cars equipped with power-assisted steering.

The "falling flow control" is incorporated to alleviate high temperature conditions associated with high speed driving and becomes effective above 5,000 r.p.m.

The pump is interchangeable only as a complete unit with the earlier type.

Spares Bulletin No. L.38 refers.

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number II.16
Section Power-Assisted Steering

Date December, 1966

POWER-ASSISTED STEERING BOX AND PUMP

Models affected	Commencing Chassis Numbers	
	R.H.D.	L.H.D.
3.4 Litre Mark 2	171101	180529
3.8 Litre Mark 2	235196	224588

Commencing at the above chassis numbers the Power-Assisted steering box and pump are identical to those fitted to current production 3.4/3.8 Litre 'S' Models.

The Data and servicing details are as quoted in Pages I.30 to I.41 of the 3.4/3.8 'S' Type Service Manual.

Note: The operating pressure of the new pump is 1,000 lb./sq.in. (70.3 kg/cm^2).

Spares Bulletin L.61 refers.

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number II.18
Section Power Assisted Steering

Sheet 1 of 1
Date July, 1967

POWER ASSISTED STEERING UNITS

Models affected	Commencing Chassis Numbers
3.4 litre Mk. 2	171583
3.8 litre Mk. 2	235312

Variamatic power assisted steering units, similar to those employed on Jaguar 420, have been introduced on R.H. Drive Mk. 2 cars at the above chassis numbers.

Oil pressure, at 1,000 lb/sq.in., is supplied by the existing Hobourn-Eaton pump coupled to the generator with a shield protecting the pump from exhaust manifold heat.

An oil cooler, attached to the engine oil sump, is incorporated in the low pressure line from the steering box to the oil reservoir.

When checking front wheel alignment, each wheel must be individually adjusted by means of the outer tie rods to give half the total toe-in of 0-⅛". The centre tie rod is set to a fixed dimension of 16-7/16" and must NOT be used for adjusting toe-in.

Routine maintenance details remain unaltered as the existing oil reservoir is retained.

Jaguar Cars Limited 2005

This Service Bulletin supersedes the original issue of July, 1967, which should be destroyed.

POWER-ASSISTED STEERING UNITS

Models affected	Commencing Chassis Numbers R.H.D.	L.H.D.
3.4 litre Mark 2	171583	
3.8 litre Mark 2	235312	
340	1J.50001	1J.80050
3.4 litre 'S' Type	1B.8682	1B.2624
3.8 litre 'S' Type	1B.59539	1B.80293

Varamatic power-assisted steering units, similar to those employed on Jaguar 420 cars, have been introduced on cars commencing at the above chassis numbers.

Oil pressure, at 1,000 lb./sq.in. (70.3 kg/cm^2), is supplied by the existing Hobourn-Eaton pump coupled to the generator with a shield protecting the pump from exhaust manifold heat.

An oil cooler, attached to the engine oil sump, is incorporated in the low pressure line from the steering box to the oil reservoir.

When checking front wheel alignment, each wheel must be individually adjusted by means of the outer tie rods to give half the total toe-in of 0"-⅛" (0 - 3.2 mm.). The centre tie-rod is set to a fixed dimension of 16-7/16" (41.78 cm.) and must NOT be used for adjusting the toe-in.

Routine maintenance details remain unaltered as the existing oil reservoir is retained.

Jaguar Cars Limited 2005

CENTRE TIE ROD ASSEMBLIES

Models affected	Commencing Chassis Numbers	
	R.H.D.	L.H.D.
3.4 litre - Mark 2	1J.52229	1K.80535
420	1F.8226	1F.27626

Commencing at the above chassis numbers an improved centre tie rod assembly incorporating modified ball end assemblies was fitted to cars equipped with power-assisted steering.

The new ball end assemblies are of steel/neoprene construction instead of the steel/rubber type previously fitted.

The new assemblies are interchangeable with the earlier type but only as complete sets. The tie rod dimensions remain identical to those stated in the relevant Service Manual.

Jaguar Cars Limited 2005

JAGUAR SERVICE BULLETIN

Number I.1
Section Steering

Sheet 1 (of 1)
Date September, 1960

FITTING TOOL FOR STEERING BOX TOP COVER

An inexpensive special tool (Part number 8343) which facilitates fitting the top cover of steering units without damage to the oil seal is available from Jaguar Spares Division.

This tool takes the form of a tapered sleeve which when placed on the worm shaft whilst fitting the top cover avoids damage to the knife edge of the oil seal on the worm shaft serrations.

The use of this tool is particularly important on power-assisted steering units but can also be used on 2.4, 3.4 and 3.8 litre standard steering boxes.

Jaguar Cars Limited 2005

Number I.4.
Section Steering

Sheet 1 (of 1)
Date April, 1962

MODIFIED RACK AND PINION PRE-LOAD PLUNGER

Models affected	Commencing Chassis Numbers	
	R.H. Drive	L.H. Drive
"E" Type Open 2-seater	850404	876847
Fixed Head Coupe	860232	885736

On cars with the above chassis numbers and onwards, the belleville washers are replaced by a spring bearing on the rack pre-load plunger. The plunger, spring and retaining cap are interchangeable with the parts fitted to earlier cars provided all three parts are fitted. The method of adjustment is as shown in the "E" Type Service Manual, page I.7. except that retaining cap replaces the disc washer.

Spares Bulletin number L.21 refers.

CHECKING STEERING COUPLING SCREWS

(Mark 1, Mark 2 and Mark 1X models)

Although it is recommended in the 10,000 miles (16,000 km) service that all chassis and body nuts, screws and bolts are checked for tightness, it has come to our notice that this is not being carried out, particularly in the case of the steering coupling cap screws.

The importance of carrying out this service cannot be too highly stressed.

CORRECT ADJUSTMENT OF STEERING LOCK STOPS

(All Models)

The importance of maintaining the correct setting of the steering lock stops is brought to the notice of all distributors and dealers.

/Continued...

Jaguar Cars Limited 2005

Mal-adjustment of the stops giving increased lock may cause damage to the steering unit owing to undue loading of the internal parts.

Distributors and dealers are requested, therefore, to make a check on all cars coming in for service and ensure that the lock stops are correctly set.

Details of the lock stop setting procedure are given in the following publications.

Mark 1 2.4/3.4 litre Service Manual	-	page I.15.
Mark 2 2.4, 3.4 and 3.8 litre Service Manual	-	page I.20 for standard steering
	-	page I.33 for power-assisted steering
Mark 1X Handbook	-	page 52

Note: No lock stops are provided on cars with rack and pinion steering as the stops are incorporated in the steering unit.

Jaguar Cars Limited 2005